



# The Cary Arboretum

of The New York Botanical Garden



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## Woodlot Management: The Complete Story for Wood Heating

by Robin Parow

Wood stove owners are hearing chilling reports on the availability of wood this winter. State forests are "off limits" to firewood collectors, and many commercial suppliers have already sold this year's production. According to Dr. Gus Tillman, Ecologist for the Cary Arboretum, woodlot management is the answer for a guaranteed supply of wood to heat many homes and buildings in upstate New York.

The concept of firewood management is a simple, yet fairly new one. It incorporates the idea of opening up or clearing out pre-selected portions of woodland in patterns of cut and uncut forest that will give remaining trees increased room for rapid growth. Some trees, such as red maple, will grow up to 100% faster using woodlot management techniques. The idea dates back to the early 1960's when foresters in the northwestern states used this method in lumber forests to increase production

and guarantee healthy timber crops. A similar concept was employed in the East by wildlife conservationists who cleared portions of forest, allowing shrubs and trees to grow in cut areas. This provided a lush winter supply of seedlings, shrubs, sprouts, and berries — all excellent browse for deer, rabbits, and birds.

Now research and education on this form of woodlot management is being carried out on the Arboretum grounds to provide teaching materials and demonstrations for firewood producers. Unlike the guidelines set in northwestern states for lumber production, trees for firewood do not require the straightness or minimal circumference (18 to 20 inches) from which the typical 2-by-4 is cut. The most practical log size for firewood is between 8 and 12 inches — usually these logs only require one split or no splitting to be transformed into ready-to-season firewood. This saves both time

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Photo by Robin Parow

Tomorrow's firewood: How can it be grown and harvested more efficiently?

## Fern Glen Officially Opened

The debut of the Arboretum's Fern Glen October 7 was more than a ceremonial opening for Dr. Willard Payne, Director, and approximately fifty guests. This Glen, which is the product of time, funds and arduous work by many students and volunteers, will soon display the most complete collection of naturalized ferns in the northeastern United States. It is an extension of the glorious indoor fern display at the New York Botanical Garden, in the Bronx, and was designed to be a Glen for all seasons.

Dr. John Mickel, Senior Fern Specialist at the Bronx New York Botanical Garden saw the potential for the Fern Glen soon after the Arboretum was founded seven years ago. With the help of Dorothy Linde, Loraine Ramsey, Winifred Hebb, Philip LoPresti, and many others, the proposed Glen began to

take form in a low, beautiful, bowl-shaped area near the Stone Bridge on Tea House Road. The site contains diverse habitats, including moist, shady wooded slopes, a bog, and sections of stately hemlock and mixed conifer forest.

A Public Service Grant from IBM, in addition to anonymous donations from Arboretum members, helped to purchase decks and bridges — all of which were constructed with every effort made to preserve and enhance the site's natural features. Unlike most gardens, the Cary Fern Glen has no stairs, and the ramps are level and hard-surfaced to accommodate the handicapped. The trails,

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Dr. John Mickel, Fern Specialist at the NYBG, points out a recently-planted specimen to Arboretum visitors in the Fern Glen.

Photo by Robin Parow



# Fall-for-All a Smash Again

Hayrides, pumpkin-carving, scarecrows, and a children's play dazzled the kids while grown-ups found information on everything from apples to wood burning at the Cary Arboretum's second annual Fall-for-All festival held October 13 and 14.

Under the direction of Arboretum Education Coordinator Peter Dykeman, this year's Fall-for-All provided information and entertainment to thousands of Arboretum visitors who came from surrounding counties, Connecticut, and Massachusetts to take part in this exciting autumnal celebration.

According to Dr. Dykeman, over a hundred Arboretum volunteers and staff members participated in the weekend event making Fall-for-All fun for everyone.

For first-time Cary visitors, it was a new experience to see how much could go on in the middle of a meadow.

Woodpinning, Hudson Valley Wines, apple identification, tree pruning, wild foods for people and birds, antique machinery, herb

gardening, and a plant sale all contributed to a weekend for every member of the family. Taste-testers enjoyed samples from a recently-compiled recipe book geared towards those who have a yen for exotic cookery now and then.



Neil Soderstrum, author of *Heating Your Home With Wood* was on hand to autograph copies of his comprehensive and highly readable book, and also gave slide lectures on wood heating.

A caterpillar turned into a fluttering butterfly in "Casy Caterpillar's Cleanup", a play written and performed by a youthful cast from Stormville Mountain.

Despite the abnormally cold temperatures and a threat of rain, visitors all went away with smiles – especially Liz Gesek of Poughkeepsie who won a cord of seasoned sugar maple firewood, and many others who won plants and trees from the Rare Plant Raffle. The raffle, according to Horticulturist Bob Hebb, was a fund-raising event for restoration of the Gifford House Gardens. Proceeds from the Fall-for-All festival aid the Cary Arboretum's Education Program which provides year-round courses and activities for students of all ages.

*Pumpkin painting and carving were among the most popular autumnal activities at the Fall-for-All festival.*

## Woodlot Management: The Complete Story for Wood Heating (continued from page 1)

and energy, and improves the net energy yield.

When practicing woodlot management, planning ahead is also important. Trees are color-coded with a latex-based paint to identify what year they should be cut. Selected, older trees, called "nurse" trees, are left to provide seeds that guarantee re-establishment of a healthy future heating resource of desirable species. At the present time, a one-acre unmanaged forest can yield approximately one cord per year, or a 4-by-4-by-8-foot pile. Dr. Tillman says, however, that each acre of forest can yield significantly more wood if appropriate management techniques are put into action.

Although wood heating may appear to be a practical, convenient heating method, Dr. Tillman cautions potential wood burners to consider the amount of fossil fuel they must use before reaping its benefits. The distance traveled to reach a wooded area and the fossil fuel consumed by a tractor and chain saw all decrease the net energy yield, and add to the cost. Maintenance of a vehicle, chain saw, wood stove, and chimney must also be added to the list of expenditures.

Renewed interest in the economies of wood heating began with the oil crunch in 1974. Since then, wood stove manufacturing has had a renaissance, with new designs and more efficient stoves. Prices for standard stoves range from \$50 to \$700. According to Dr. Tillman, consumers frequently invest in inexpensive, inefficient, and sometimes dangerous stoves and chimneys. Second-rate stoves and accessories also contribute to a general loss in energy yield.

It is likewise important to realize which types of wood are efficient burners. Ash is a fast growing wood that burns well and requires minimal seasoning. Sugar maple, red and white oak, honey locust, and hickory – although they require more

seasoning – are also good energy producers. Generally speaking, woods that are heavy and dense when dry yield more heat per piece than those that are light and soft. Try to avoid pines, spruces, and other conifers that burn fast and produce resin that coats the chimney with creosote. All woods secrete an oily liquid that condenses on the inner surface of the chimney as creosote, and chimneys or flues should be cleaned regularly to avoid chimney fires. The better seasoned or dried the wood is, the less creosote buildup there will tend to be, and more BTU's (British thermal units) will be produced because less will be required to drive off water. Pre-seasoning can be accomplished by girdling trees while they are still standing. This involves removing a strip of bark around the entire circumference of a tree's trunk. The cut exhausts the food supply to the roots by interrupting the phloem tubes which take food manufactured in leaves downward. Eventually the roots die, leaving the dead tree standing in the open where it dries quickly. Pre-seasoning also may be done by use of injections which interrupt the same leaf-to-root feeding process.

Wood burning as a main or supplemental heat source should not be treated as a fad or novelty. The serious wood heater knows his trees, stove, and equipment, and makes the most of this knowledge. A CETA grant has recently been awarded to the Arboretum to pursue woodlot management techniques. According to Dr. Willard W. Payne, Arboretum Director, CETA employees will join the Cary staff next July and will be given woodlot training and practical knowledge of different woods and their burning qualities. Workers will be trained in management techniques and in safe and efficient procedures for harvesting, splitting, curing, and stacking firewood. This knowledge can be a stepping-stone toward independent business ventures in woodlot management – a business which will be both profitable and enjoyable to the outdoorsman. More importantly, it will help make our only renewable energy resource available to consumers while preserving the important aesthetic and wildlife benefits of our forests.

## Charles Chase Joins Cary Staff



Photo by Robin Parrow

Charles G. Chase, who has recently taken on the important position of Assistant Director for Special Projects at Cary, says he finds it "exciting and stimulating to be working with the Arboretum staff."

A resident of Fishkill, Chuck is actively involved in adult leadership training for Boy Scouts. He enjoys back-packing, tennis, and is the father of four young adults ranging from ages 17 to 28.

Mr. Chase was the Director of Planning and Evaluation at Southern Westchester BOCES for 14 years. He has been President of the Greene County Teachers Association, Treasurer of the Dutchess County Girl Scout Council, and has been a teacher/administrator in New York State schools for the past 30 years.

His duties at Cary will include program development and fund raising. His plan is to establish a model for outside funding which will enhance educational programs and attract types of support the Arboretum needs.

# At the Garden

The New York Botanical Garden Division in the Bronx is only a 70-mile drive from Millbrook.

Take the Taconic State Parkway South to the Saw Mill River Parkway, and exit left onto the Mosholu Parkway. Follow the Mosholu until it ends – turn right at the traffic light, and the garden is on your left. Admission is \$1.50 for adults and 75¢ for children, students, and senior citizens. "Friends of the Arboretum" are admitted free.



# Soviet Botanists Visit Arboretum

The 1979 delegation of three Soviet Botanists to the United States ended its 35-day tour with a visit to the Cary Arboretum, October 12-14. Dr. Thomas Elias and Mr. Robert Hebb accompanied them for much of the tour through the northwestern United States, and served as hosts in Millbrook.

This visit to the U.S. by Soviets was part of a highly successful, field-oriented botanical exchange program and has developed from a bilateral agreement facilitating scientific cooperation in environmental protection.

Dr. Elias, who has been designated by the Department of the Interior as coordinator of the project, joined with Cary Horticulturist Bob Hebb and members of the National Parks and U.S. Forest Service in the Pacific Northwest to introduce the three botanists to species of trees, shrubs, and herbs found in that area of the United States – a climate very similar to that of parts of the southern Soviet Union.

Seeds, living plants, and dried herbarium specimens were collected by the Soviets at Mt. Ranier National Park, Crater Lake National Park, Olympic Rain Forest National Park, the Cascade Mountains, and the Siskoyu Mountains.

The visiting botanists were especially interested in the trees, including the Western White Pine, White Bark Pine, Sugar Pine, firs, and spruces. One endangered species, *Darlingtonia californica*, commonly called the Cobra Plant, also caught their interest. This large carnivorous plant is only found in Oregon and northern California.

Since the climates of both the Pacific northwest and the U.S.S.R. are so similar, samples of trees such as the Colorado Blue Spruce are in great demand by Soviet botanists who are anxious to carry out a major program to introduce American based trees to the U.S.S.R. as food and lumber crops, re-forestation, research, ornamental plantings, and street trees.

According to Dr. Elias, exchanges with the U.S.S.R. have been improving over the past four years. A valuable basis for study is being built and significant steps are being taken to understand the relationship between the plants of North America and the Soviet Union. Continued field trips into different regions of the Soviet Union are currently scheduled to resume in August, 1980.

The living collection of trees and shrubs at The Cary Arboretum has been greatly enhanced by introductions from the U.S.S.R. as a result of this exchange program. The Arboretum now has many species in cultivation that are not found elsewhere in North America.

One of the Soviet visitors, Dr. Isa Baitulin, Director of the Botanical Garden Academy of Sciences in Alma Ata, Kazakhstan, U.S.S.R., donated eight books on Kazakhstan and botanical science to the Cary Library. These, in addition to the botanical samples exchanged during the visit, combine to make the U.S.S.R. - U.S.A. Scientific Exchange Program a great success.

Harvesttime has brought a host of chrysanthemums and autumn annuals to the beautiful Enid A. Haupt Conservatory. See a glorious display of mums in the fullest possible range — a giant exhibition of free-flowering plants, trained columns, bushy cascades, lush baskets, and tree-like standards.

The "Crystal Palace" concerts will fill the Conservatory with music through next April. These delightful concerts, held under the great dome amid the flowers, begin at 6:00 p.m. On November 18 the Sylvan Wind Quartet will perform "Music of the Americas" — past and contemporary works by Western Hemisphere composers including

Samuel Barber and Villa Lobos. December 16 will bring soloists of the New York City Opera. The "Flower Duet" will form the thematic centerpiece of a concert created for soprano and mezzo-soprano voices.

On December 15 the annual Christmas show opens, featuring thousands of poinsettias — a seasonal favorite which will be displayed in many shades, shapes, and sizes. This exhibit, in addition to a Christmas Plant Sale, is one of the most spectacular events of the season.

For more information on events at the Garden, call Robin Parow at 914-677-5343.

## People at the Arboretum

Phyllis Haight, Secretary . . . Mother of three children and secretary to four research scientists, Phyllis is in great demand. Letters, reports, and research papers typed in anything from Spanish to scientific Latin-jargon certainly add a touch of uniqueness to her duties.



Phyllis Haight

Originally from Amenia, New York, she and her husband Don have lived in Millbrook 12 years. Their children Jennifer, 7, Andy, 13, and Jimmy, 10, are frequent callers to the Arboretum "just to hear Mom's voice." At home Phyllis enjoys crocheting and reading mysteries. Her baking talents can be vouched for by staff members in the Arboretum's Plant Science Building who occasionally find a surprise cake or cookies in the coffee room.

After a 12-year career lapse, and with all her children enrolled in school, Phyllis began working at the "Millbrook Round Table" and later joined the Cary staff in 1977.

"I have picked up a great deal of general knowledge from the scientific staff," she says. "The different areas of research with which each department is involved are really fascinating."

In return for her typing expertise and secretarial conscientiousness, it's not unusual to see a special gift or bouquet of flowers at her desk from a scientific admirer. Members of the scientific staff realize that their work wouldn't be complete without Phyllis to help them pull their hours of research experience together and to make every job a job well done.

# Around the Arboretum

## Streptocarpus Plus

The Arboretum Plant and Gift Shop in the Gifford House Education and Visitor Center is a resource of unique and special gifts for everyone on your shopping list.

During November, Streptocarpus in all shades of lavender, purple, white and pink will be on sale, as well as Japanese grafted cacti, and the unusual insectivorous plants, *Pinquicula caudata*.

During the Christmas season, holiday plants including African Violets, poinsettias, and orchids will decorate the shop with holiday colors. Care information sheets will be available for the first-time grower.

The Arboretum Gift and Plant Shop is open Wednesday through Sunday, 1:30 to 4:30 p.m.

## Cornucopia of Gifts

Books, personal notes, day lilies and waste receptacles donated by Arboretum-minded people, have all been gratefully received during the past month.

A donation of 56 books on gardening, flower design, landscaping and houseplants from the late Mrs. Eugene Daley of Sarasota, Florida, has enriched the circulating collection of the Cary library located in the Plant Science Building. Examples of titles include *Your Garden Soil: How to Make the Most of It*, *Contemporary Perennials*, *Japanese Gardens Today*, and *Floral Art in America*.

Mr. Cecil Hecocks, former Secretary with the Department of Conservation, recently donated his collection of private notes and research literature from his books *The Compleat Brown Trout* and *The Education of an Outdoorsman*. Mr. Hecocks is a resident of Millbrook and plans to publish his next book, *The Gallant Grouse*, within the next few months.

The Millbrook Chapter of the Central Dutchess Rotary Club made and donated

three barrel-size waste receptacles which were distributed at different points on the Arboretum grounds.

Mrs. Victoria Bergles of Rhinebeck is lending a hand in garden development for the 19th century Gifford House. She has donated a selection of day lilies that will enhance the federal-style brick building and add a touch of history as well. Mrs. Bergles, who breeds day lilies, is particularly interested in the historical connection between plants and architecture. The selection of day lilies donated reflects the types commonly seen around homes of the Gifford House era.

## Hybridization Program

A Chinese elm tree in New York City's Central Park, believed to be one of the oldest Chinese elms in the United States, is the focus of research by Dr. David Karnosky to save American elms from Dutch elm disease. This work is being funded by a grant

received in September from the Arthur Ross Foundation. The grant, in the amount of \$22,600, will run for two years.

Dr. Karnosky, who is the Arboretum's Forest Geneticist, is currently attempting to cross the Chinese elm (*Ulmus parvifolia*) with the American elm (*Ulmus americana*) to see if a hybrid can be developed to withstand the ravages of Dutch elm disease, which has killed many American elms but does not appear to affect Chinese elms.

Also, cuttings will be taken from the venerable Central Park tree for propagation and further hybridizing experiments. The tree was planted in 1859 and is located at the entrance to the park at 72nd Street and Fifth Avenue.

The work in Central Park is an expansion of Dr. Karnosky's breeding experiments, which have so far concentrated on cross-breeding the resistant Siberian elm (*Ulmus pumila*) with the threatened American elm.

## Fern Glen Officially Opened

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which are masterpieces by themselves, were constructed by eight members of the Dutchess County Youth Conservation Corps who worked in the Glen during the summer months. Under the direction of Grounds Foreman John Bouton, these enthusiastic youths built bridges over several small streams, and they and the grounds staff constructed an extensive boardwalk which leads visitors through central portions of the wet basin.

Mr. and Mrs. H. Lincoln Foster of Falls Village, Connecticut, donated rocks for the limestone cobble, a rock garden-like area for lime-loving ferns. The cobble is a memorial to Clayton Douglas Linde. Mr. Earl Grieshaber, rock garden specialist at the Bronx New York Botanical Garden, designed and placed the cobble stones. Many interesting ferns, such as the walking fern, Japanese painted fern, dwarf maiden-

hair, ebony spleenwort, numerous crested horticultural forms and variations of the Hart's tongue fern, and other species, are now being established in this planting.

Ferns native to the area, as well as species imported from other parts of North America, Europe, Japan, the Soviet Union, and Mexico, are all identified separately with embossed brass labels. Native and exotic wildflowers, including several species of primroses, add color notes when they bloom.

The project was supervised by Cary Arboretum Horticulturist Bob Hebb, who worked closely with the Garden's Vice President Carlton Lees. "I feel the Glen will be of great interest to the public, and is a basis upon which to build in the future," he said. Mr. Hebb plans to expand both the rock area for "acid-loving" ferns and the bog garden in the future.

## THE CARY ARBORETUM of THE NEW YORK BOTANICAL GARDEN

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REES005165CA 021079  
MR & MRS WILLIS L M REESE  
345 MEADOWVIEW AVE  
HEWLETT L I N Y 11557